CLAIMS

1.   A population of polynucleotides comprising at least one polynucleotide comprising a polynucleotide sequence selected from the group consisting of SEQ ID NOS. 1 through 40, or its respective complement.

2.   The population of claim 1, wherein the one polynucleotide comprises a novel tag or its complement selected from the group consisting of SEQ ID NO. 24 to 26, 29, 32 to 35 or 38, or its respective complement.

3.   An isolated polynucleotide comprising a polynucleotide sequence selected from the group of sequences consisting of SEQ. ID. NOS:24 to 26, 29, 32 to 35 or 38, or its respective complement.

4.   A gene delivery vehicle comprising an isolated polynucleotide of any of claims 1 to 3.

5.   A host cell comprising an isolated polynucleotide of any of claims 1 to 3.

6.   An isolated polynucleotide comprising a polynucleotide sequence obtained by identification of larger fragment or full-length coding sequence of the sequence depicted in SEQ ID NOS: 24 to 26, 29, 32 to 35 or 38, or its respective complement.

7.   An isolated second polynucleotide corresponding to the polynucleotide of claim 1.

8.   An isolated polynucleotide fragment of the polynucleotide of claim 7.

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9. A polynucleotide according to claim 6 attached to a solid support.

10. A polynucleotide comprising a polynucleotide sequence selected from the group consisting of SEQ ID NOS: 24 to 26, 29, 32 to 35 or 38, or its respective complement attached to a solid support.

11. The polynucleotide of claim 10, wherein the solid support is a chip array.

12. An isolated polypeptide comprising a polypeptide encoded by the polynucleotide sequence of claim 6.

13. An antibody which recognizes an epitope on a polypeptide of claim 12.

14. A method for detecting a lung cancer cell, comprising contacting a polynucleotide isolated from a sample suspected of containing the lung cancer cell with a polynucleotide selected from the group consisting of SEQ ID NOS: 1 through 40, under conditions that favor hybridization of complementary polynucleotides and detecting a hybridized complement, wherein overexpression of the hybridized complement is indicative of the presence of a lung cancer cell.

15. A method for detecting a lung cancer cell, comprising contacting a polynucleotide isolated from a sample suspected of containing the lung cancer cell with a polynucleotide obtained by identification of larger fragment or full-length coding sequences of the sequences selected from the group consisting of SEQ ID NOS: 1 through 40, under conditions that favor hybridization of complementary polynucleotides and detecting a hybridized complement, wherein overexpression of the hybridized complement is indicative of the presence of a lung cancer cell.

16.   The method of claim 14 or 15, wherein the polynucleotide is immobilized on a solid support.

17.   A method for detecting a lung cancer cell, comprising contacting a polynucleotide isolated from a sample suspected of containing the lung cancer cell with a polynucleotide selected from the group consisting of polynucleotides of SEQ ID NOS. 1 through 40, under conditions that favor hybridization; and amplifying complementary polynucleotides in the sample, wherein detection the amplified polynucleotides is indicative of a lung cancer cell.

18.   A method for detecting a lung cancer cell, comprising contacting a polynucleotide isolated from a sample suspected of containing the lung cancer cell with a polynucleotide obtained by identification or larger fragment or full-length coding sequences of the polynucleotide sequences selected from the group consisting of polynucleotides of SEQ ID NOS. 1 through 40, under conditions that favor hybridization; and amplifying complementary polynucleotides in the sample, wherein detection the amplified polynucleotides is indicative of a lung cancer cell.

19.   A method for detecting a lung cancer cell, comprising contacting a sample suspected of containing the lung cancer cell an agent that specifically binds to a gene product produced from a gene selected from the group consisting of carboxylesterase, NB1, 1GFbp5, HCG4, BST2, U2snrnp aux fac, 8-oxo-D-GTPase, GST sub 4 or GST 1 or GSTM 2, apolipe J or SP40 or trpm-2, or sulfated gp2, DSS1, thioredoxin reductase, B-myb, myeloblast mitochondrial outer memb protein, α-tubulin, p27, sox 2 or HMG box, epithelial memb proT 2/XMP, Na/K ATPase β subunit, glutathione perox-like protein, HSP90, and ODC-1, and detecting any agent:gene product complex so formed, thereby detecting a lung cancer cell.

20.	The method of claim 18, wherein the agent is a monoclonal antibody.

21.	A method for detecting a lung cancer cell, comprising contacting a sample suspected of containing the lung cancer cell with an agent that specifically binds to a gene product produced from a polynucleotide comprising a polynucleotide sequence obtained by identification of larger fragment or full-length coding sequence selected from the group consisting of SEQ ID NOS: 24 to 26, 29, 32 to 35 or 38, and detecting any agent:peptide complex so formed, thereby detecting a lung cancer cell.

22.	The method for claim 21, wherein the agent is a monoclonal antibody.

23.	A system for identifying selected polynucleotide records that identify a lung cancer cell, the system comprising:
	a digital computer;
	a database coupled to the computer;
	a database coupled to the database server having data stored therein, the data comprising records of data combined from polynucleotide obtained from the polynucleotide sequences comprising SEQ ID NOS: 1 to 40; and
	a code mechanism for applying queries based upon a desired selection criteria to the data file in the database to produce reports of polynucleotide records which match the desired selection criteria.

24.	A method for detecting a lung cancer cell, using a computer having a processor, memory, display, and input/output devices, the method comprising the steps of:
	a)	providing a sequence of a polynucleotide isolated from a sample suspected of containing a lung cancer cell;
	b)	providing the database of claim 23; and

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c)   using a code mechanism for applying queries based upon a desired selection criteria to the data file in the database to produce reports of polynucleotide records of step a) which provide a match of the desired selection criteria of the sequences in the database of step b), the presence of a match being a positive indication that the polynucleotide of step a) has been isolated from a cell that is a lung cancer cell.

25.   A screen for polynucleotides differentially expressed in lung cancer cells, comprising searching sequence databases for nucleotide sequences homologous to a polynucleotide selected from the group consisting of SEQ ID NOS: 1 through 40 and detecting sequences with homology thereby identifying polynucleotides differentially expressed in lung cancer cells.

26.   A screen for a potential therapeutic agent for the reversal of the neoplastic condition of a lung cell wherein the cell is characterized by expression of a polynucleotide selected from the group consisting of the polynucleotides depicted in SEQ ID NOS. 1 through 40, comprising contacting a cell expressing the polynucleotide with an effective amount of a potential agent and assaying for reversal of the neoplastic condition.

27.   A screen for a potential therapeutic agent for the reversal of the neoplastic condition of a lung cell wherein the cell is characterized by expression of a polynucleotide selected from the group consisting of the polynucleotides obtained by identification or larger fragment or full-length coding sequences of the sequences depicted in SEQ ID NOS: 1 to 40, comprising contacting a cell expressing the polynucleotide with an effective amount of a potential agent and assaying for reversal of the neoplastic condition.

28.   A kit for use in a detection method according to any one of claims 11 to 15 comprising in suitable packaging:

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one or more polynucleotides selected from the group consisting of
SEQ ID NOS: 1-40 immobilized on a solid support; and

a reagent suitable for hybridizing a sample suspected of containing the
lung cancer cell.

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29.   A non-human transgenic animal having a disruption in a
polynucleotide corresponding to a polynucleotide having a sequence selected
from the group consisting of SEQ ID NOS: 1-40.